CLAIMS

What is claimed is:

1. A method of executing a computer program distributed across a plurality of computers, said method comprising the steps of:

a) obtaining available excess computer capacity from a plurality of potential participants;

b) partitioning a computer program into a plurality of independent tasks of approximately equal size;

c) distributing said tasks to said participants according to available excess capacity;

d) determining whether each distributed task will execute within a selected range of other said distributed tasks;

e) beginning execution of said distributed tasks;

f) receiving completed tasks from said participants; and

g) determining whether every task has been executed by at least one participant.

2. A method as in claim 1, wherein the step (a) of obtaining available capacity, each of said participants registers a machine, registering each said machine comprises the steps of:

i) obtaining a committed number of hours for said registered machine;

ii) determining an effective capacity for said registered machine; and

iii) determining the normalized excess capacity for said registered machine.

3. A method as in claim 2, further comprising repeating steps (i) through (iii) until a normalized excess capacity is determined for each said registered machine.

4. A method of doing business as in claim 3, wherein each participant is compensated responsive to a corresponding said normalized excess capacity.

5. A method of doing business as in claim 4, wherein a requesting party requests execution of said computer program, said requesting party paying a fee for execution of said computer program.

6. A method of doing business as in claim 5, wherein said fee is selectively increased or decreased responsive to available normalized excess capacity.

7. A method of doing business as in claim 4, wherein the normalized excess capacity determined in step (iii) is determined responsive to a probability measurement for said participant.

8. A method of doing business as in claim 7, wherein the probability measurement is derived from past participation by said participant.

9. A method of doing business as in claim 8, wherein each new participant is provided with one or more benchmark tasks, said new participants' normalized excess capacity being adjusted responsive to performance of said one or more benchmark tasks.

10. A method as in claim 1, wherein in step (b) of partitioning of the computer program a plurality of said independent tasks from said partition are assigned to a plurality of participating machines.

11. A method as in claim 10, wherein after assigning independent tasks, any task determined to be unassigned is randomly assigned to an available machine.

12. A method as in claim 11, wherein after every task has been assigned to a plurality of said machines, a completion time is estimated for completion of execution of said computer program.

13. A method as in claim 12, wherein said plan is determined feasible based on said estimated completion time.

14. A method as in claim 1, wherein the step (d) of determining whether each task will execute within the selected range further includes reassigning any task determined to be unlikely to execute within said range.

15. A method as in claim 1, wherein as each completed task is received in step (f), a check is made to determine whether said completed task is on schedule.

16. A method as in claim 10, wherein any participant producing a task that is not on schedule is determined to have a slow machine and other tasks assigned to such slow machines are reassigned to other available participants.

17. A method as in claim 15, wherein after all said tasks are completed, results from said machines are compared and best solutions are selected from each said task.

18. A distributed processing system for transferring excess capacity from a plurality of computers to a party requiring execution of a computer program, said distributed processing system comprising:

a plurality of participating computers connected together over a network;

means for determining a normalized excess capacity for each participating computer;

means for partitioning a computer program into a plurality of independent tasks;

means for distributing said tasks to said participating computers according to normalized excess capacity;

means for determining whether each distributed task will complete within a selected range of other said distributed tasks and redistributing any of said tasks determined to not complete within said selected range;

means for receiving completed tasks from said computers; and

means for determining whether each task has been executed by at least one computer.

19. A distributed processing system as in claim 18, further comprising registration means for registering participating computers, said registration means comprising:

means for obtaining a committed number of hours for a registering computer; and

means for determining an effective capacity for said registered computer, the normalized excess capacity being determined from the effective capacity for said registered computer.

20. A distributed processing system as in claim 19, wherein each registering user is paid a fee for any normalized excess capacity used by said system, said fee being determined by the sum of available excess capacity.

21. A distributed processing system as in claim 20, wherein a person requesting execution of said computer program pays a fee for said execution.

22. A distributed processing system as in claim 21, further comprising means for estimating a completion time for execution of said computer program.

23. A distributed processing system as in claim 22, further comprising means for determining whether assigned tasks are completed on schedule.

24. A distributed processing system as in claim 23, further comprising means for selecting a best solution for each task from received completed task results.

25. A distributed processing system as in claim 20, further comprising:
means for deriving a probability measurement for each registered user.

26. A distributed processing system as in claim 25, wherein the means for deriving a probability measurement comprises:
means for measuring execution of tasks; and
means for logging measured execution.

27. A computer program product for selling unused excess capacity of a plurality of connected computers to a party requiring execution of a partitionable computer program, said computer program product comprising a computer useable medium having computer readable program code thereon, said computer readable program code comprising:
computer readable program code means for registering a plurality of participating computers;

computer readable program code means for partitioning a computer program into a plurality of independent tasks;

computer readable program code means for distributing said tasks to said registered participating computers according to normalized excess capacity;

computer readable program code means for determining whether each distributed task will complete within a selected range of other said distributed tasks and redistributing any of said tasks identified as not completing within said selected range;

computer readable program code means for receiving completed tasks from said computers; and

computer readable program code means for determining whether each task has been executed by at least one computer.

28. A computer program product as in claim 27, wherein the computer readable program code means for registering participating computers comprises:

computer readable program code means for obtaining a committed number of hours for a computer being registered; and

computer readable program code means for determining an effective capacity for said registered computer, the normalized excess capacity being determined from the effective capacity for said registered computer.

29. A computer program product as in claim 28, wherein computer program code means for registering computers comprises computer program code means for determining a fee for any normalized excess capacity and a charge to parties requiring program execution, said fee and said charge being determined responsive to the sum of available excess capacity.

30. A computer program product as in claim 29, wherein a person requesting execution of said computer program pays said charge.

31. A computer program product as in claim 30, further comprising computer readable program code means for determining whether assigned tasks are completed on schedule and reassigning any tasks determined to not be on schedule.

32. A computer program product as in claim 31, further comprising computer readable program code means for selecting a best solution for each task from a plurality of received completed task results for each task.

33. A computer program product as in claim 32, further comprising:

computer readable program code means for measuring execution of tasks; and

computer readable program code means for logging measured execution.